

FIG. 1

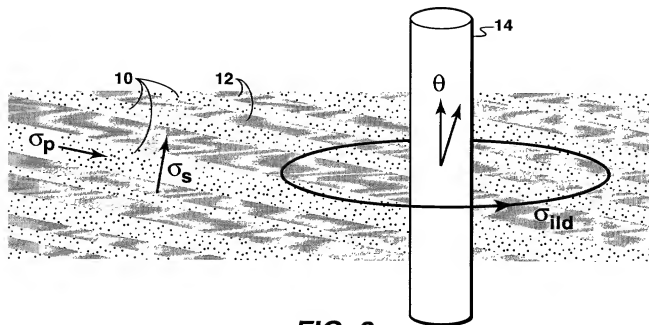


FIG. 2

1042475.0109002

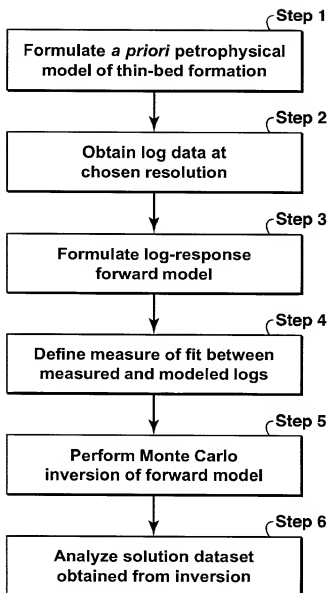


FIG. 3

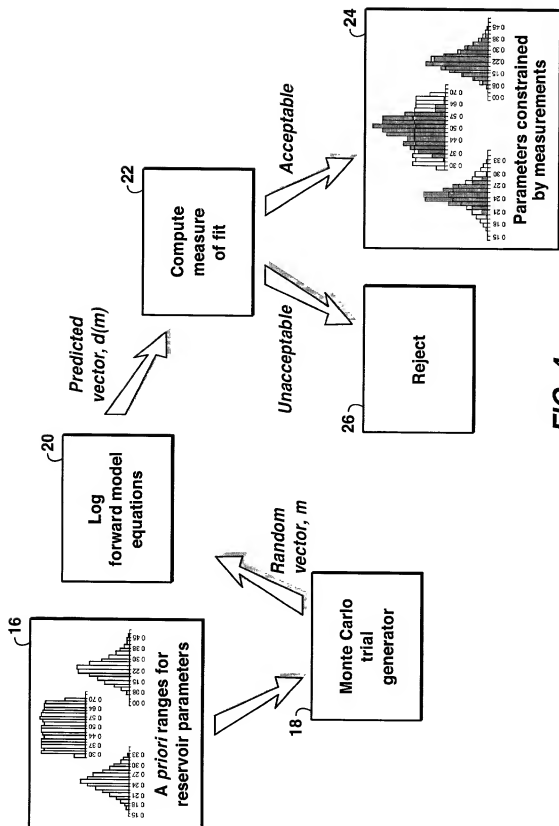


FIG. 4

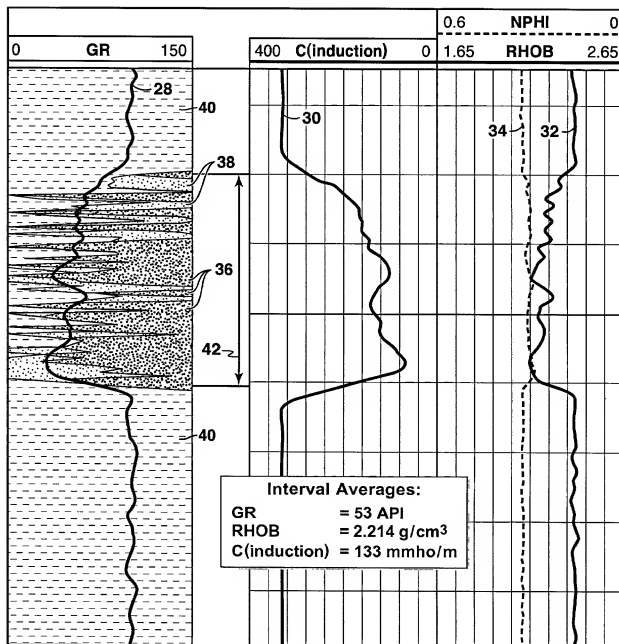


FIG. 5

Bed Type Parameters	Bed Types			Interval Values	
	HiQ Sand	LoQ Sand	Shale	Sand	Total
ϕ_t (total porosity)	0.30	0.25	0.25	0.28	0.24
S_{wt}	0.15	0.35	0.35	0.22	0.36
m (cementation exponent)	2.00	1.80	1.80		
n (saturation exponent)	2.00	2.00	2.00		
aspect ratio	0.00	0.00	0.00		
volume fraction	0.45	0.26	0.26		
HPV (feet)	3.50	1.29	1.29	4.79	4.79

Other Parameters	
C_w (mmho/m)	1000
angle (degrees)	0
interval thickness (ft)	30.5

FIG. 6

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VLSA Step 1									
	Bed Type Inputs			Averages		Log Inputs		REL ERROR	
	HiQ Sand	LoQ Sand	Shale	Sand	Total	Mean	StdDev		
PHIT	0.300	0.250	0.150	0.278	0.242				
Swt	0.150	0.350	1.000	0.228	0.364				
Swb	0.000	0.000	0.000	0.000	0.000				
m	2.00	1.80	1.80	1.91	1.86				
n	2.00	2.00	2.00	1.86	1.66				
rhoma	2.650	2.650	2.620	2.650	2.640				
rhof	0.850	0.850	1.000	0.850	0.876				
GR	25	40	100	32	53	53	10	-0.05	
RHOB	2.110	2.200	2.377	2.149	2.214	2.214	0.01	-0.02	
Ct	20	101	329	55	133	133	5	0.01	
Aspect	0.0001	0.0001	0.0001						
frac	0.405	0.311	0.284	2.149	1.000	MSE: 0.001			
HPV (ft)	3.148	1.542	0.000	4.690	4.690	MAXABS: 0.049			
Other Parameters			LAYOUT MODEL		Cell Definitions				
Cwf	10000			SOLVE VOLUMES		nnn	Input field		
Cwb	10000					nnn	Computed value		
angle	0.0					nnn	Solver solution (or manual input)		
h (ft)	30.5								

FIG. 7

Parameter		Step 1 Value	Input: StdDev	AMin	BMin	Input: Min	Input: Max
Cwf Cwb Angle h (ft)		10000	100	2.00	2.00	9800	10200
		10000	100	2.00	2.00	9800	10200
		0	1.0	0.00	0.00	0.0	0.0
		30.5	1.0	0.00	0.00	30.5	30.5
frac	HiQ Sand	0.450	1.000	0.45	0.25	0.000	0.700
	LoQ Sand	.0260	1.000	0.26	0.44	0.000	0.700
	Shale	0.290	1.000	0.29	0.41	0.000	0.700
Aspect	HiQ Sand	0.0001	1.000	0.00	0.10	0.0001	0.1000
	LoQ Sand	0.0001	1.000	0.00	0.10	0.0001	0.1000
	Shale	0.0001	1.000	0.00	0.10	0.0001	0.1000
PHIT	HiQ Sand	0.300	0.010	2.00	2.00	0.280	0.320
	LoQ Sand	0.250	0.010	2.00	2.00	0.230	0.270
	Shale	0.150	0.010	2.00	2.00	0.130	0.170
Swt	HiQ Sand	0.150	1.000	0.10	0.15	0.050	0.300
	LoQ Sand	0.350	1.000	0.10	0.10	0.250	0.450
	Shale	1.000	1.000	0.00	0.00	1.000	1.000
Swb	HiQ Sand	0.000	1.000	0.00	0.00	0.000	0.000
	LoQ Sand	0.000	1.000	0.00	0.00	0.000	0.000
	Shale	0.000	1.000	0.00	0.00	0.000	0.000
m	HiQ Sand	2.00	0.07	2.86	2.86	1.80	2.20
	LoQ Sand	1.80	0.07	2.86	2.86	1.60	2.00
Ct	Shale	329	100	0.20	0.20	309	349
n	HiQ Sand	2.00	0.07	2.86	2.86	1.80	2.20
	LoQ Sand	2.00	0.07	2.86	2.86	1.80	2.20
	Shale	2.00	0.07	0.00	0.00	2.00	2.00
rhoma	HiQ Sand	2.65	0.01	1.00	1.00	2.64	2.66
	LoQ Sand	2.65	0.01	2.00	2.00	2.63	2.67
	Shale	2.62	0.01	1.00	3.00	2.61	2.65
rhoF	HiQ Sand	0.85	0.01	5.00	5.00	0.80	0.90
	LoQ Sand	0.85	0.01	5.00	5.00	0.80	0.90
	Shale	1.00	0.01	0.00	0.00	1.00	1.00
GR	HiQ Sand	25	10	0.50	0.50	20	30
	LoQ Sand	40	10	1.00	1.00	30	50
	Shale	100	20	0.75	0.75	85	115

FIG. 8

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Defining distribution parameters StdDev, Amin, Amax

Base-case Sw value = 0.15; Min = 0.05, Max = 0.30

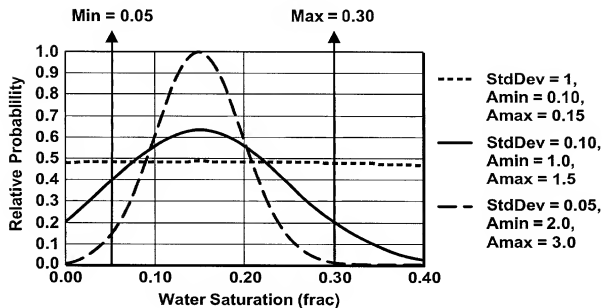


FIG. 9

VLSA Monte Carlo case viewer

	Bed Type Inputs			Averages		Log Inputs		PROB. INDEX
	HiQ Sand	LoQ Sand	Shale	Sand	Total	Mean	StdDev	
PHIT	0.289	0.238	0.135	0.285	0.238			
Swt	0.226	0.377	1.000	0.236	0.372			
Swb	0.000	0.000	0.000	0.000	0.000			
m	2.07	1.71	1.68	2.04	1.92			
n	2.01	1.91	2.00	1.96	1.58			
rhoma	2.652	2.665	2.624	2.653	2.643			
rhof	0.843	0.850	1.000	0.844	0.872			
GR	23	42	96	25	49	53	10	0.92
RHOB	2.129	2.233	2.405	2.137	2.221	2.214	0.01	0.76
Ct	38	134	344	45	132	133	5	0.99
Aspect	0.0439	0.0439	0.0439					
frac	0.633	0.052	0.315	0.685	1.000			
HPV (ft)	4.318	0.236	0.000	4.554	4.554			
Other Parameters				Cell Definitions				
Cwf	9962			nnn	Selected case no.			
Cwb	9853			nnn	From Step 1			
angle	0.0			nnn	Case value			
h (ft)	30.5			nnn	Computed value			
Trial no.	492							
of total:	1000							
				Joint PI 0.70				
				Cases 7				

FIG. 10

Statistics: Combined Sand Bed Types

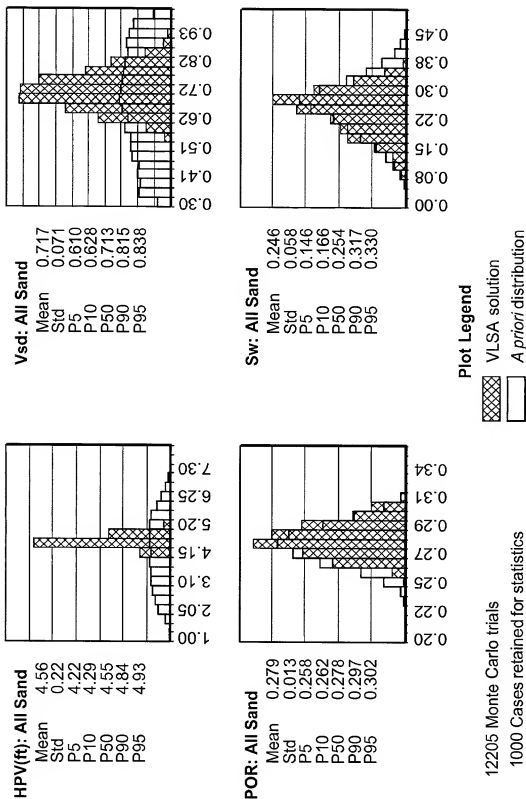


FIG. 11